Mental health services utilization after Mariana dam burst

Marcelo DellAringa

MF Dell'Aringa[1], GE Corrêa-Oliveira[2], F Della Corte[1], L Ragazzoni[1], ES Miranda[3], V Murray[4], F Barone-Adesi[1]
[1]CRIMEDIM-Research Center in Emergency and Disaster Medicine, Università del Piemonte Orientale, Novara, Italy
[2]Neuroscience and Behavior Department, Universidade de São Paulo, Ribeirão Preto, Brazil
[3]Department of Pharmacy, Universidade Federal Fluminense, Niterói, Brazil
[4]Global Disaster Risk Reduction, Public Health England, London, UK
Contact: marcelo.dellaringa@uniupo.it

Background:
The global burden of mental health conditions is increasing, especially in middle- and low-income countries and frequently the quality of mental health services is lower than the quality of services for other conditions. Disasters may increase this burden through their direct impact or due to secondary stressors, such as the preclusion of access to essential services. The aim of this study is to assess the impact of Mariana dam burst (Brazil) in November 2015, in the utilization of public mental health services by the population that experienced an interruption of water supply after the event.
Methods:
We used data from DATASUS, the database of the Brazilian public health system, analyzing data from 34 months before to 36 months after the event. We defined as affected the population living in the municipalities of Minas Gerais state that had an interruption of water supply after the event and the rest of the state population as the comparison group. We designed an Interrupted time-series analysis to evaluate both immediate and gradual changes in use of mental health services after the accident.
Results:
The affected population included 381,749 inhabitants and the comparison group 20,487,352 inhabitants. The monthly rate of mental health visits in the affected population in the beginning of the series was 296 (CI 182 to 409, $p < 0.001$) per 100.000 person-month. Comparing the groups after the event, we observed a non-statistically significant higher increase in the rate of visits immediately after the event of 115.96 (CI -30.00 to

261.92, $p = 0.118$) and a significant increase in the monthly rate of visits (change in slope) of 15.55 (CI 8.19 to 22.92, $p < 0.001$) in the affected group.

Discussion:

The results suggest that the event translated in a long-term increase in mental health services utilization. We believe that this study presents an innovative methodology on the assessment of mental health services after disasters and that it could be adapted to other contexts.

Key messages:

- Indirect impacts of disasters may be associated with long-term changes in the utilization of mental health services.
- Interrupted time series using routine data are useful tools for the assessment of health services utilization following disasters.